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Gesture Typing-Enabled Physical Keyboard

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GESTURE TYPING-ENABLED PHYSICAL KEYBOARD

ABSTRACT

A system and method is disclosed that enables gesture typing on a keyboard. The system includes sensors suitably integrated into the keyboard. The sensor resolution is chosen in a way that any part of the key may be touched, allowing the users finger to glide over the keys. Software included in the system analyzes the pattern of keys hit over time. The software suggests the most likely words, and close alternative word hypotheses may also be presented on screen. The physical keys present enable standard typing and for typing non-dictionary words or character strings such as passwords, specific numbers and the like. If a user types normally, standard typing is enabled and gesture recognition is superseded. This system enables faster and less strenuous typing, improving efficiency.

BACKGROUND

Conventionally, gesture keyboards exist for phones and tablets. Some laptops have a touch bar, which is a full capacitive screen, without physical buttons. The absence of physical buttons prevents the user from removing his eyes from the keypad at the time of typing.

DESCRIPTION

A system and method are disclosed that enable gesture typing on a physical keyboard. This system includes a physical keyboard and sensors added to sense touch as shown in FIG. 1. The system also includes software to analyze the input given using the keyboard. The resolution of the sensor used is at least one bit per key so that any part of the key may be touched. This allows the user to glide their finger over the keys. The system includes software that analyzes the pattern of keys hit over time to determine the most likely word, similar to existing gesture keyboards. Close alternative word hypotheses may also be presented on screen. The alternative

words may be cycled through using "tab".

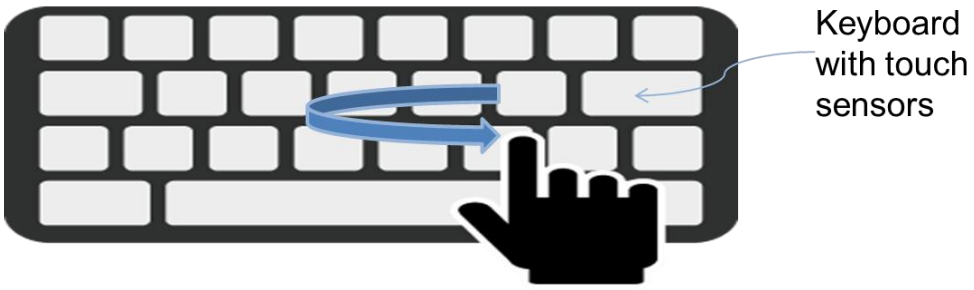

FIG. 1: Gesture typing enabled physical keyboard

The physical keys present are also usable for standard typing. This assists in typing non-dictionary words or character strings such as passwords, specific numbers and the like. The physical keyboard also provides a tactile reference and removes the necessity to type while looking at the keypad. If a user uses normal touch typing, the text is typed as normal, and supersedes any gesture recognition. Also, the user may opt to use one hand for gestures and the other for touch typing.

The gesture typing-enabled keyboard may include various sensor technologies on the keys to recognize a touching action. The sensors may be capacitive, piezoelectric or other suitable sensors. The sensors may be integrated into the keys or additionally, between keys to sense passage of a finger between them, for example.

This system enables faster and less strenuous typing. Additional advantages include opportunities for gestures without removing hands from keys, improving efficiency. Scrolling down a set amount may be achieved by sliding the fingers from "k" to "i" repeatedly, for example.